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H.G. Wells's Idea of a World Brain: A Critical Reassessment

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What exactly are the Wellsian World Brain or World Encyclopaedia ideas to which reference is so often made? What did they mean for Wells? What might they mean for us? This article examines closely what Wells says about them in his book, *World Brain* (1938), and in a number of works that elaborate what is expressed there. The article discusses aspects of the context within which Wells's conception of a new world encyclopaedia organization was formulated and its role in the main thrust of his thought. The article argues that Wells's ideas about a World Brain are embedded in a structure of thought that may be shown to entail on the one hand notions of social repression and control that must give us pause, and on the other a concept of the nature and organization of knowledge that may well be no longer acceptable. By examining Wells's ideas in some detail and attempting to articulate the systems of belief which shaped them and which otherwise lie silent beneath them, the author hopes to provoke questions about current theorizing about the nature of global information systems and emergent intelligence.

Introduction

In 1938, at age 72, H.G. Wells published, in American and English editions, his little book of essays and speeches titled, *World Brain.* At this time of his life, Wells was an internationally famous literary figure. His books, fiction and nonfiction alike, were popular and widely translated. He had access to the leading statesmen of his day. Though *World Brain* marked an important stage in his writing, it was by no means the last of his books. His voluminous output of fiction, social criticism, and journalism continued up to the year of his death in 1946.

Despite the great length of his career, Wells is perhaps best known today for a group of novels of science fiction that appeared in the last years of the nineteenth century and of social realism that appeared early in the twentieth, though his first book was a textbook of biology that went through numerous editions (Wells, 1893, and, e.g., Wells and Davies, 1929). This work reflected his years as a biology student and disciple of T.H. Huxley at what later became Imperial College of Science and Technology (Wells, 1934, pp. 159–165).

Wells was a utopian social reformer. He was intrigued by socialism and was caught up for a time before the First World War with Beatrice and Sidney Webb, George Bernard Shaw, and others in the Fabian Society. After the war he became increasingly and passionately dedicated to the idea that a new kind of world order was needed. In this connection he witnessed the rise of fascism and the Russian communist state with a curious ambivalence. As contemptuously critical as he was, especially of the fascist dictators, he seemed on occasion to suggest that their totalitarian regimes represented stages in the evolution of the new kind of single, unified World State that he believed was inevitable (Wells, 1933, pp. 123–128; 1934, pp. 215–216; 1940–1941, pp. 1170–1173).

Wells was also a great autodidact and popularizer of contemporary knowledge. His *Outline of History* (Wells, 1919*), Work Wealth and Happiness of Mankind* (Wells, 1931a), and the *Science of Life* (Wells, Huxley, & Wells, 1931), the last prepared collaboratively with his son Gyp and Julian Huxley, T.H. Huxley's grandson and himself a distinguished biologist, represent quite extraordinary feats of comprehensive, intelligible, plainly written synthesis.

The ideas that Wells finally pulled together in *World Brain* had a long gestation in his earlier writing and were profoundly important to him. They focused, as we will see, important aspects of his thinking about evolution, social reform, and world organization. The book was, and continues to be, influential. *World Brain*, has been reprinted twice in the last 25 years or so (1971 and 1994). Alan Mayne's 1994 edition contains a comprehensive but by no means complete bibliography of more than 200 items about the World Brain and related matters. Mayne's introductory essay, almost half as long as Wells's text, suggests in some detail what needs to be done today in order finally to achieve what Wells had proposed more than half a century ago.

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Information scientists and others concerned with the creation of systems for the organization, communication, and retrieval of information constitute one group who continue to be inspired by Wells (Davis, 1937, 1965; Kochen, 1965, 1972, 1975a,b; Kochen et al., 1967; Garfield, 1975, 1977a,b, 1983, 1984, 1985; Case, 1977; Lesk, 1997; Petersen, 1996; Shenk, 1997a,b). The World Brain or Global Brain trope also seems to be widely employed by those who speculate about the nature and impact of the contemporary global communications infrastructure and its future development. Their focus is the Internet and the World Wide Web, from which they believe an "actual" global mind is emerging. The members of the Principia Cybernetic Group are very much concerned with these notions.[1] Sometimes their work refers to Wells, but on the whole it does not (Judge, 1982; Goertzel, 1998; Heylighen & Bollen, 1996; Heylighen, 1997; Mayer-Kress, 1995a,b).

Perhaps part of the brain image's contemporary seductiveness lies in the way in which it seems to permit an imperceptible modulation of description and analysis from the metaphorical to the material and back again. Most current invocations of Wells's ideas about a World Brain, however, can be described as superficial, selective, and nearly always *en passant.* The references to it are essentially incantatory. Almost casually, for example, the distinguished information scientist, Michael Lesk, recently concluded a paper disseminated on the Web with the observation that current trends suggest that "there will be enough disk space and tape storage in the world to store everything people write, say, perform, or photograph. For writing this is true already; for others it is only a year or two away." Lesk does not question the desirability of this appalling prospect, but concludes that we are now on the verge of realizing that "brain" organization that Wells had envisioned. "We could build a real 'World Encyclopaedia' with a true 'planetary memory for all mankind' as Wells wrote in 1938," Lesk observes. He mentions that Wells had talked of "knitting all the intellectual workers of the world through a common interest." "We could do it," says Lesk (Lesk, 1997, p. 5). But would we want to do it?

By examining Wells's World Brain ideas in some detail and attempting to articulate the systems of belief which shaped them and which otherwise lie silent beneath them, I hope to provoke—though I do not attempt to answer—questions about current ideas of the nature of global information systems and emergent intelligence. Implicit in the concept of "Brain" is some notion of central direction and control that is exercised over something both consciously as a matter of intelligence and informed judgment and automatically. How do proposals for the World or Global Brain encompass these notions? Of what, for example, is the World or Global Brain a part—what is its body? How does it manifest intelligence and informed judgment? How do the systems which constitute the "World Brain" require individuals to discipline their interests and behavior, to configure themselves in conformity with these systems. To what extent is the independence and initiative of both individuals and particular groups threatened in a social and political regime ordered by current conceptions of a global brain? To what extent is what is designed a conscious or unconscious reflection of the prejudices, the idiosyncrasies, and the cognitive and imaginative limitations of the system designers or those who have commissioned and paid for such systems? To what extent are these systems necessarily an embodiment of the cultural circumstances of time and place, the reflection of a particular world view? How might an "emergent" intelligence transcend these limitations?

The argument of this article is that Wells's ideas about a World Brain, as startling and resonant as they seem to be, are nevertheless embedded in a structure of thought that may be shown to entail, on the one hand, notions of social repression and control that must give us pause, and on the other, ideas about the nature and organization of knowledge that may well be no longer acceptable. I ask, what exactly are the Wellsian World Brain or World Encyclopaedia ideas to which reference is so often made? With what social and political institutions are the texts which present Wells World Brain ideas articulated? What tacit temporally and culturally situated codes of ethics do they entail? How are World Brain ideas underpinned by, or an expression of, Wells's fundamental beliefs about mankind, government and society?

I examine closely what Wells says about the World Brain in his book of that title and in a number of works that elaborate what is expressed there. Moving beyond these descriptive limitations, I try to better understand aspects of the context within which Wells's conception of a new world encyclopaedia organization was formulated and its role in the main thrust of his thought.

I argue that attempting to unravel the nature and structure of these beliefs will not only affect our attitudes towards his World Brain ideas; they should influence our assessment of their continuing relevance, though to undertake that assessment is not the purpose of this article beyond highlighting the issues of power and control, the "political–social" problematic, that modern proposals for a World or Global Brain necessarily raise.

A Note on Method

The process I have adopted for presenting Wells's ideas is a form of pastiche. It involves using his own words wherever possible. I bring together excerpts from particular works written at different times, in different circumstances, and for what may seem like different immediate purposes as though one work were in the process of endless elaboration. This commits me to a questionable assumption of continuity and consistency of ideas in Wells's exercises in different literary genres that date from different periods of his life.

[1] Their Web site provides access to a range of relevant materials. See, for example, "Basic References on the Global Brain/Superorganism." Available at http://pespmc1.vub.ac.be/gbrainref.html and Global Brain discussion list archive by date; http://www.cpm.mmu.ac.uk/~majordom/gbrain/.

This assumption, however, is not difficult to justify in that Wells was extremely repetitive in his prodigiously voluminous writing. He was also aware himself of how he constantly restated and reworked a number of fundamental ideas. "I have become a shouting philosopher and I clamour, I clamour with an increasing shrillness for a gigantic effort to pull together the mind of the race before it is altogether too late," he tells us in 1939. Even though I am, he says, "almost alone with my outcries," he pushes on saying and repeating "first in this form and then in that, that an educational revolution, a new Encyclopedism," is necessary if humanity is not to "perish" (Fadiman, 1939, pp. 422–423). The sense of the frustration that came of being ignored and the sometimes hectoring, sometimes wheedling tone in which his frustration was expressed are evident in *Science and the World Mind.* "I am going to repeat once more certain statements of fact that I have made over and over again in the last few years," he says (Wells, 1942a, p. 5). And in one guise or another, often at exhaustive length, he had indeed made the same points, so much more matters of opinion than fact, over and over again with a ruthless repetitiveness for more than 40 years. The importance for Wells of the reformulation and repetition of his ideas was that, for most of his life, he was acting as a propagandist for a deeply felt, deeply personal critique of his time that was closely articulated to his utopian vision of the future.

This comes out clearly in his *Experiment in Autobiography* (Wells, 1934). This is an extraordinarily self-conscious, frank, and even today, sometimes embarrassing outline of a history of himself. In it he attempts retrospectively to integrate the recollection of intimately personal experience and feelings with his life on the public stage. To be fair, he tries to contain the subjectivity implicit in the very idea of autobiography. He bases his reflections on—and refers constantly to—correspondence and the drafts and published versions of his work as they mark what were for him important stages of development in his career as novelist, journalist and social theorist. He explicitly limits himself to a focus on that organ whose development one might say "determines" him, his brain. It is this that makes his *Autobiography* an "experiment." The subtitle of the work is "discoveries and conclusions of a very ordinary brain"—not life, or person, or character, or even student, lover, writer, unorthodox socialist, or eccentric celebrity. His aim seems to be to demonstrate how his thinking over the long period of his productive intellectual life inevitably took the shape that it did.

Such a work as Wells's *Autobiography* must necessarily be treated with some caution. There are limits to what introspection can recover. Memory inevitably distorts recollections of the past. Inherent in all autobiographical writing is a tangle of motivations and points of view. While it may be necessary for some biographical or analytical purposes to be suspicious of the accounts that the *Autobiography* provides, what it says must also be taken at face value as reflecting something important about Wells and his view of himself and his work.

For my purpose this work provides evidence that Wells's theories about, and observations of, people and society were strongly formed and coherent early in his life and that he held on to them tenaciously throughout his long career. They were not replaced, reinvented, or radically revised as the decades went by. They were simply restated, redeveloped, further elaborated, and given various fictional and nonfictional guises in an effort to make them more effective in influencing the attitudes and opinions of his readers.

Thus, in my exploration of Wells's ideas about a World Brain and my attempt to create a context for them, I ignore what distinguishes one work from another. I ignore the cumulating experiences of an eventful life and the possibility of interpreting the effects of these experiences on Wells's attitudes, ideas, and beliefs. I ignore the changing contemporary social, historical, and intellectual circumstances which provide a frame within which Wells's ideas, and the works in which they were expressed, took shape.[2]

My argument is that the juxtapositions I make reveal an organized system of thought, a systematic articulation of ideas about politics, society, biology, and human ecology. This helps us to achieve new kinds of understanding of the particular leading idea of Wells which is my focus—the World Brain. At one level this seems a simple general notion. It captures a new kind of requirement for knowledge organization and access in a superficially arresting image. But I argue that this notion has a complexity, a disturbing resonance that arises from its place in the structure of Wells's thought. By means of the technique I have adopted, I attempt to cast Wells idea of a World Brain in a new light and to give it the clarity, shape and definition that it has lacked as a result of the casual references I have referred to above.

The Nature of Wells's World Brain

Social and Political Need for a World Brain

Examining the social and political trends of his day, Wells believed that at last, slowly, in a fragmentary and disorderly fashion, intelligent men and woman throughout the world were beginning to realize the full dimensions of what he called the "World Problem" (Wells, 1938, p. 50). They had begun to see the implications of both the failure of, and the potential for transformation implicit in, the internationalizing initiatives—what he called "projects for Cosmopolitan Synthesis"—evident all around them (Wells, 1931a, pp. 709–715). What was needed, he declared, was a "New World or nothing. We have to make a new world for ourselves or we shall suffer and perish amidst the downfall of the decaying old" (Wells, 1938, p. 47).

As he contemplated the portentous events of the 1930s, Wells still believed (at least before the repudiation of all hope that occurred in *Mind at the End of its Tether,* published in 1945, not long before he died) that there were

[2] See in this connection Dilloway (1998) and Muddiman (1998).

forces at large in society that were driving mankind "towards release, abundance, one World Pax, one world control of violence" (Wells, 1938, p. 54). But he was fearful, "all this experimenting and muddling towards world organization takes time." He saw terrible danger ahead as he argued for an active, thoughtful, open approach—what he called a worldwide "Open Conspiracy" (Wells, 1928, 1931)—to creating a new unity, a new organizational and social synthesis for the world. The Open Conspiracy was necessary, he believed, if "human society" were to be rescued "from the net of tradition in which it is entangled and [reconstructed] upon planetary lines" (Wells 1934, p. 549).

As early as 1902 he had formulated a preliminary version of the Open Conspiracy, which he called the New Republic. It would mobilize power and intelligence to create a new kind of social and political synthesis, a new world unity beyond the confines of the established political order (Wells, 1902). His terms for this new unity, this new synthesis, were variously a New Republic, a new world state, a world commonweal, a federation of all humanity, a new world organism, a world government (Wells, 1920, p. 579; 1934, pp. 549–707 *passim;* Wagar, 1965, pp. 273–275, 288–301).

At first he seems to have thought that the Open Conspiracy that would transform the world would be best served if it evolved "special ad hoc organisations, societies for the promotion of Research, for Research Defence, for World Indexing, for the Translation of Scientific Papers, for the Diffusion of New Knowledge." In this piecemeal way a "new world organisation of scientific work" might be built up embracing, rather than displacing, "dear old institutions as the Royal Society of London, the various European Academies of Science and the like" (Wells, 1928, p. 120). But he soon came to the view that something more profound, far reaching, systematic, and centralized was needed, what he would call a World Brain.

The Inadequacy of the Modern Knowledge Apparatus

In his *Work, Wealth and the Happiness of Mankind* (1931a), Wells noted "the immense amount of incoherent learning in progress throughout the world." There was "a clamour of statement, misstatement and counter-statement" that suggested the need for a "systematic ordering and drawing together of human thought and knowledge." He discussed the "Role of an Encyclopaedia in a Progressive Civilisation," concluding that the new encyclopaedia organization that he was proposing would become "the central ganglion, as it were, of the collective human brain." That a reference of this kind is essentially metaphorical is suggested by the captions to the illustrations of this section of the book. A picture of the main reading room of the New York Public Library is labeled, "the mind of the world: A cell in its brain." A picture of a high-speed printing press for newspapers and magazines is labeled, "The mind of the world: Its nerve and brain tissue" (Wells, 1931b, pp. 839, 854, between 820–821).

Wells's address in 1936 to the Royal Institution began a concentrated period of promoting his World Brain ideas. In stressing the "conspicuous ineffectiveness of modern knowledge" (Wells, 1938, p. 5), Wells referred to President Roosevelt's social experimentation as represented by the Brain Trust and the New Deal. Wells had visited Roosevelt and was very impressed with him both as a statesman and a personality (Wells, 1934, pp. 679–682). Roosevelt had appealed, said Wells, "for such knowledge and understanding as existed to come to his aid." Here was someone who was "open and receptive for the organized information and guidance. . .*that wasn't there*" (Wells 1938, p. 9 original punctuation and italics; also cf. 1942b, pp. 155–156).

When he made his American tour in the autumn of 1937, he elaborated these ideas in a speech that was repeated in Philadelphia, Boston, Detroit, Chicago, Washington, and New York, where the speech was also broadcast (Smith, 1986, p. 336).

> "A great new world is struggling into existence. But its struggle remains catastrophic until it can produce an adequate knowledge organization. . .An immense, an ever-increasing wealth of knowledge is scattered about the world today, a wealth of knowledge and suggestion that—systematically ordered and generally disseminated—would probably give this giant vision and direction and suffice to solve all the mighty difficulties of our age, but the knowledge is still dispersed, unorganized, impotent in the face of adventurous violence and mass excitement" (Wells, 1938, pp. 66–67).

"I believe," he wrote to the publisher, Nelson Doubleday, "that those great modern communities which it is now the fashion to call democracies, and more particularly those that speak English, are in need of a much more elaborate, powerful and closely knit knowledge and educational organisation than they possess at the present. Their mental equipment, their will system, is not equal to the challenges of our modern world." What is needed "for a modern world educational structure," he continued, is a "new centralising and unifying organ, which I have called the Permanent World Encyclopaedia" (Wells, 1998).

The "knowledge apparatus" of the world, Wells observed, had grown up through the ages "Unpremeditated. Without a plan" (Wells, 1938, p. 59). It was now simply "not up to our necessities," he said. (p. 61). It had to be modernized. Wells acknowledged that we have now begun to frame "preliminary ideas for a federal world control of such things as communications, health, money, economic adjustments, and the suppression of crime." But "all of these ideas of unifying mankind's affairs depend ultimately for their realization on mankind having a unified mind for the job" (pp. 57, 58). The emergence of that unified mind was to be the result of the creation and the essential function of a World Brain. "It would be the concrete beginnings of an actual world mind" (Wells, 1998). In 1939 he returned to what he called "my refrain, 'We need a World Brain,'" and to his "insistence that the creation of a greater mental

superstructure to reorient the mind of the world is an entirely practicable proposal" (Wells, 1942b, p. 158).

The World Brain (1938)

He believed that his "modern encyclopaedism" constituted a "scheme for the reorganization and reorientation of education and information throughout the world. No less" (Wells, 1938, p. 17). It would involve assembling, he declared, "facts and suggestions with the same insistence upon scientific reality and the same exclusion of irrelevancies that has controlled the establishment of the world outlook that I have put before the reader." The result was the publication in 1938 of his "small book," *World Brain.* He described this as "a book quite bold and uncompromising in substance, but still with a distinctly propitiatory manner" (Wells, 1942a, p. 59).

He began a campaign for the acceptance of his ideas in the United States and Australia in 1937 (Smith, 1986; Outhwwaite, 1937). He was a tremendous success. When he gave his speech about the World Brain at Northwestern University, for example, over 5,000 people crowded in to hear him. This was the largest crowd ever assembled under one roof in Evanston the *Daily Northwestern* reported,[3] showing a picture of him planting a tree, the kind of activity usually reserved for Heads of State. He continued the campaign in Australia where he was bewildered and disappointed by the disjunction that occurred between the lively interest that was expressed in his lectures on the "new encyclopaedia and a radical revision of the world's educational organization" and the lack of any practical effect of what he said on his audiences, who "were not," he observed "a consciously backward people" (Wells, 1942b, p. 62).

He did not give up but continued to pursue these ideas as best he could. He believed that "it is only in such an educational organization as I have been deducing from our present needs, and I hope, forecasting here, in such a permanent organization of knowledge, systematically assembled, continually extended, and renewed and made freely and easily accessible to everyone, that there is the slightest hope of our species meeting the serried challenges of destiny that are advancing upon it" (pp. 62–63).

The World Brain and Universities

Wells was adamant that what was needed was a quite new kind of organization. It might draw perhaps on existing organizations but it would not be an adaptation of any of them. "It is a super university I am thinking of, a world brain; no less. It is nothing in the nature of a supplementary enterprise. It is a completion necessary to modernize the university idea" (Wells, 1938, p. 27). He stressed this repeatedly. It is a "a new social organ, a new institution" (p. 17). "I am talking of an essentially *new* organization—an *addition* to the intellectual apparatus of the world (p. 73 [his italics]).

In theory one might suppose that the universities would be a primary focus for the reforms in knowledge organization that Wells was recommending. But he was scathing about the irrelevance of the universities of the day. He described them as "floating over the general disorder of mankind like a beautiful sunset over a battlefield" (Wells, 1938, p. 5). In another equally vivid image he said that "Universities go out to meet the tremendous challenges of our social and political life, like men who go out in armour with bows and arrows to meet a bombing aeroplane" (p. 46). He was impatient with the collegiate or "finishing school" aspects of much of what they did (p. 51). In an article he prepared for the new *Encyclopédie française* in 1937, he was skeptical of ". . .any further tinkering with the highly conservative and resistant university system, local, national and traditional in texture, which already exists" (p. 58).

But he could not deny universities some importance in the new organization he was proposing. In the *Work Wealth and Happiness of Mankind* he had hesitated to speculate about "how far this establishment of an encyclopaedia as a recognized central organ of mental life of mankind may be attainable by a transformation of university activities" among other things (Wells, 1931a, p. 796). But later he saw the "tentacles" of his encyclopaedia reaching into the universities for the research and scholarship that "is the living reality of the university" (Wells, 1938, p. 51). "Every university and research institution should be feeding it" (p. 14). "It would become the logical nucleus of the world's research universities and post-graduate studies" (Wells, 1931a, p. 796). It would be a "clearing house" for them, a cerebral cortex for which they were "essential ganglia" (Wells, 1938, p. 50).

Indeed he suggested that the organization he was proposing "would outgrow in scale and influence alike any single university that exists, and it would inevitably take the place of the loose-knit university system of the world in the concentration of research and thought and the direction of the general education of mankind" (Wells, 1938, p. 95). In fact the new encyclopedism he was advocating was "the only possible method I can imagine, of bringing the universities and research institutions around the world into effective cooperation and creating an intellectual authority sufficient to control and direct collective life" (Wells 1938, p. 48). Ultimately the World Encyclopaedia would be "a permanent institution, a mighty super-university, holding together, utilizing and dominating all of the teaching and research organizations at present in existence" (Wells, 1942a, p. 59).

The Sociotechnical Organization of the World Encyclopaedia

The nearest Wells came to thinking through his scheme in relatively practical terms was when he tried to interest Nelson Doubleday, the American publisher, in taking up the

[3] Reported in a long caption to a picture in the *Daily Northwestern* of Wells planting the tree and republished in *The H.G.Wells Newsletter,* Winter 1982/1983, 2, 1.

idea. He wrote enthusiastically to Doubleday at the end of 1937 about it, calling it "a magnificent idea" (Wells, 1937b). Then a few months later he sent Doubleday "a *private* memorandum." In which he stated, "I can't get anything going with the Encyclopaedia in this period of Blue Funk. It is altogether too big for the time." This memorandum, he said, "is really addressed to myself, so to speak, to get the situation clear" (Wells, 1998).

He believed that rather than beginning the project ab initio, a publisher like Doubleday might well get it underway by taking over the *Encyclopédie française* that was then being produced. The "plan" of the new French work Wells believed was excellent (Wells, 1937b). "It is a very valuable experiment in the coordination of ideas. It is intended to be a permanent institution and it is issued in the form of volumes of replaceable parts so that it can be kept permanently up-to-date" (Wells, 1998). It was he said, later, recapitulating his ideas, "a magnificent attempt to create an orderly modern outlook upon the world" (Wells, 1942a, p. 36).

But it was not a matter simply of translating the *Encyclopédie française.* "It would have to be cut here, expanded there, supplemented, the volumes rearranged by an interchange of matter." To get the thing underway Wells suggested that Doubleday should set up a promotions company "which included H.G.W." The purpose of the new company would be to "acquire an unambiguous control of the translation rights, with unlimited power to abridge, expand, alter, adapt, supplement, etc., etc.. . ." He did not think acquiring these rights would cost much. He also thought that the French parent might wish ultimately to come into the venture as a joint shareholder (Wells, 1937b).

An editorial committee could be put to work to guide the revisions and expansion of the material. At first he suggested that "you would find that H.G.W. for all his faults would be the best chairman of the editorial committee and the best general editor of the matter" (Wells, 1937b). Later, perhaps reflecting on the less than enthusiastic response he had so far had to his ideas, he suggested that he should not continue to have too close an association with the scheme. To remove "this menace of a Wellsian bias," he suggested that "a representative and catholic committee—neither too numerous nor too narrow, of, seven, let us say, which will give a satisfactory guarantee against the definite exploitation in the interests of any person, party, propaganda or profit seeking whatever" (Wells, 1998).

Once the promotions company had acquired the rights to the French encyclopaedia it should be replaced by a Production company to carry the venture through. Then "x" (he crossed through a first suggestion of "two") years after publication of the work, the production company itself would be reconstituted as "a permanent international educational organ, supplementing and coordinating universities, research institutions and schools of the English-speaking world" (Wells, 1937b).

As an organization he wanted to ensure that it was not tainted by overt commercialism. It must not be "another merely business venture," he argued (Wells, 1998). But he believed that, because the organization, worldwide in scope, would have "roped in the larger part of the original sources of exposition, discussion and information," it would become a world monopoly. As such it could levy and distribute "direct and indirect revenue on a scale quite beyond the resources of any private publishing enterprise." Wells goes on to observe rather quaintly, "I do not see that the financial aspects of this huge enterprise, big though the sums involved may be, present any insurmountable difficulties in the way of realization" (Wells, 1938, p. 30). What was needed financially, he suggested, was an endowment to provide the resources for employing "thousands of workers permanently, spending and recovering millions of pounds yearly" (Wells, 1931a, p. 846).

The new organization would have "a directorate and a staff of men who would act as, specialized editors and summarists." It would accumulate files and have conference rooms. It was an organization that would function as a "sort of mental clearing house for the mind, a depot where knowledge and ideas are received, sorted, summarized, digested, clarified, compared" (Wells, 1938, p. 69). Later, musing on the "Work room of the world-mind," Wells observed that both general and particular digests or summaries would be needed. This would require the employment of "hundreds of thousands of workers" continually to "replan" the summaries and digests and bring them up-to-date (Wells, 1942a, p. 35). The personnel of the new organization "would be in correspondence with all of the universities, research organizations and so on throughout the world" (Wells, 1938, p. 69). Indeed these workers might not actually all be in one place and the organization might take the form of a "network," though he did not examine the implications of this statement.[4]

Wells saw it as a "double-faced organization, a perpetual digest and conference on the one hand and a system of publication and distribution on the other" (Wells, 1938, pp. 70–71). He referred to the library and "book-copying operation" of the Museum of Alexandria (Wells, 1931a, p. 841) and suggested that the new Encyclopaedia organization would revive "on a modern scale the high ambitions of the Alexandria Museum," it would become "the central Museum of the world. . ." (p. 847). Reflecting on these ideas towards the end of his life, he thought a more effective name for what he was proposing would have been World Institute of Thought and Knowledge rather than World Encyclopaedia or World Brain (Wells, 1942a, pp. 36).

He suggested that a preparatory survey of existing material and the compilation of bibliographies of authoritative sources would collectively "give the best, clearest and most quintessential renderings of what is known and thought within their departments" (Wells, 1938, p. 28). The world "is smothered in a multiplicity of books," he observed, "yet it is quite practicable that in every department of thought

[4] Uwe Jochum sees something rather more anticipatory of contemporary developments in Well's passing references to decentralization and networks than I (Jochum, 1995).

and knowledge, the best statement, the best diagrams, the clearest arguments and the most lucid summaries are to be found in a relatively small number of key volumes and key passages in books." He believed that "Such a bibliography of fundamentals would be in effect the index to an unassembled modern encyclopaedia. In the public library, in schools and college, it would at once become a most valuable reader's guide" (Wells, 1998). It could also be published separately to give some financial return. Wells saw other salable and useful products deriving from the work of the encyclopaedia organization as well, such as "a series of textbooks, and shorter reference encyclopaedias and encyclopedic dictionaries" designed for "individual and casual use" (Wells, 1938, p. 70).

Wells, Documentation, and Microfilm

The new organization he was proposing would "include all the museums, art galleries, libraries, muniment rooms, Atlases, Surveys in the world." As such it constituted "a vast, dispersed—or shall we say imperfectly assembled?—largely inaccessible wealth of knowledge, and our first line of attack has to be the indexing of this primary material" (Wells, 1942a, p. 34). Thus the encyclopaedia would be an "organ for the collection, indexing, summarizing and release of knowledge." It would be "a synthesis of bibliography and documentation with the indexed archives of the world" (Wells, 1938, p. 85). It would consist "of selections, extracts, quotations very carefully assembled with the approval of outstanding authorities in each subject, carefully collated and edited and critically presented. It would not be a miscellany but a concentration, clarification and a synthesis" (Wells, 1938, p. 20). "I attach considerable importance," he said, "to the making of approved abstracts and quotations. There has been too much second rate abstracting in preceding Encyclopaedias. In all cases when a thing has already been stated in a masterly way it is better to quote frankly than to rewrite" (Wells, 1937b).

In his Doubleday-Doran memorandum of 1938, Wells observed that "a sort of organic encyclopedism is already appearing in the shape of a more and more comprehensive organization of documentation, bibliography, microfilm records and so on" (Wells, 1998). "Few people as yet," he observed, "outside the world of expert librarians and museum curators and so forth, know how manageable well-ordered facts can be made, however multitudinous, and how swiftly and completely even the rarest visions and the most recondite matters can be recalled, once they have been put in place in a well-ordered scheme of reference and reproduction." He had become aware that "there is no practical obstacle whatever now to the creation of an efficient index of all human knowledge, ideas and achievements, to the creation that is of a complete planetary memory for all." (Wells, 1938, p .86). In speaking to the World Congress on Universal Documentation in Paris in 1937, he observed that he saw in the work of documentation and bibliography "nothing less than the beginning of a world brain, a common world brain. What you are making me realize is a sort of cerebrum for humanity, a cerebral cortex which (when it is fully developed) will constitute a memory and a perception of current reality for the entire human race" (Wells, 1938, p. 91; Rayward, 1983).

These ideas reflected the influence on Wells of the work of Watson Davis who corresponded with Wells about microfilm early in 1937 (and the two men met at the 1937 World Congress on Universal Documentation and probably in Washington when Wells visited the United States in the fall of 1937) (Wells, 1937a).[5] Equally important was the work of the British documentalists, A.F.C. Pollard of Imperial College and Dr. S.C. Bradford of the Science Museum.[6] When they learned of Wells's participation in the 1937 World Congress on Documentation in Paris, which was in part to be a test of the continued viability of the International Institute of Documentation (Rayward, 1983), they made contact with him.[7] They explained the new kinds of documentary work that they were sponsoring, especially the creation of a universal catalogue of science literature that Bradford was attempting to build up in the Science Museum Library as an aspect of the re-organized work of the International Institute of Bibliography (Rayward, 1975, ch. 13). They suggested that what the documentalists were doing could provide a practical foundation on which Well's World Encyclopaedia could be erected.

Wells made their acquaintance and some limited social contact developed between the three men. Eventually Wells suggested that Pollard prepare a major paper on his ideas for creating Wells' encyclopaedia for presentation and discussion at the Conference of the International Institute of Documentation which was to be held at Oxford later in 1938. There was even some thought that Wells might chair the appropriate session (Pollard, 1938; Wells, 1937–1938). Certainly Wells acknowledges clearly and generously his debt to these "documentalists (Wells, 1942a, p. 34).

Wells recognized that "modern facilities of transport, radio, photographic reproduction, and so forth are rendering practicable a much more fully succinct and accessible assembly of fact and ideas than was ever possible before" (Wells, 1938, p. 84). But microfilm would have a special role. Because of the developments that had been occurring in microfilm, "the direct reproduction of the thing itself can

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[5] In an earlier paper the author indicated in error that there was no correspondence between Watson Davis and Wells in the Wells Papers at the University of Illinois (Rayward, 1993, p. 173). There is in fact a small file with material about Science Service that Davis sent Wells and Wells has annotated a letter from Davis for March 15, 1937.

[6] Pollard was Professor of Physics at Imperial College and had published a translation of the tables for optics of the Universal Decimal Classification (UDC). The preparation and publication of the UDC was one the *raisons d'être* of the International Institute of Bibliography which had been set up in Brussels in 1895 by Paul Otlet and Henri La Fontaine (Rayward, 1975, 1997). In 1927 Pollard and Bradford and some other colleagues had created the British Society for International Bibliography as the British member of the International Institute of Bibliography of which Pollard was president from 1927 to 1931. Bradford was the great British apologist for the UDC (Rayward 1975, *passim* and 1994; Bradford, 1948).

[7] The International Institute of Bibliography had been renamed International Institute of Documentation in 1931 under Pollard's presidency.

be summoned to any properly prepared spot" (Wells, 1938, p. 86). In the future he believed that there may well be "microscopic libraries of record, in which a photograph of every important book and document in the world will be stowed away and made easily available. . ." (p. 76).

Wells's imagination was powerfully stimulated by the development of this avant-garde information technology of the day and he used a vivid cortical image to emphasize its potential. He thought that microfilm presaged a "a real intellectual unification of our race. The whole of human memory can be, and probably in short time will be, made accessible to every individual." But this "new all-human cerebellum" created through the agency of microfilm would not be subject to "the same vulnerabilities of ordinary human beings because of the ease of making duplicate copies" (Wells, 1938, pp. 86–87). "In these days of destruction, violence and general insecurity, it is comforting to think that the brain of mankind, the race brain, can exist in numerous replicas throughout the world" (p. 92). He believed that this replicability of microfilm represented "the abolition of distance on the intellectual plane" (Wells, 1942a, p. 35).[8]

The World Brain in the Context of Wells's Thought

The descriptions given above place Wells's World Encylopedia ideas in the limited context within which they were initially presented—in what he wrote to Nelson Doubleday and what he included in his *World Brain*, with some of his preliminary and subsequent reflections on what he called "modern encyclopedism." I now turn to considering the implications of Wells's view that this organization could be thought to constitute a foundation for, a manifestation of, a World Brain or World Mind. Though Wells speaks, as in the passages given above, of a World Brain as a development of a conventional, print-based encyclopaedia, he also speaks of it as some kind of mysteriously emergent organizational phenomenon. To see what Wells had in mind about this notion it is necessary to place it in the wider context of his writing about social Darwinism and the nature of the World State.

Biology, Evolution, and The Science of Life

In the massive, four-volume *The Science of Life,* (Wells, Huxley, & Wells, 1931) one might expect to find an account of the physical brain that could guide one's understanding of the metaphorical uses Wells made of the notion in writing about a World Brain. In a sense this is so but in an entirely surprising way.[9]

What emerges in the final chapters of this massive work, at the end of some 1,400 pages reviewing evolutionary and biological processes in the world of man and animals, is the observation that the development of contemporary social life is "the latest, greatest and strangest of the products of evolution" (p. 1439). In the long evolutionary process of man and beast the only real differences to emerge between human thought and the mental life of the higher animals lie in acuity of perception and exactness of response, but these crucial differences have allowed mankind to form and follow "directive" ideas (p. 1328). Gradually in the evolutionary process man's thinking becomes more realistic, his sympathies expand, "his sense of fellowship replaces an animal hostility to strangers and to unfamiliar types." Throughout the story is "the concurrent improvement of mankind's means of transport, and a steady development of his methods of expression, record and communication" (p. 1451). "By means of books, pictures, museums and the like, the species builds up the apparatus of a super-human memory. Imaginatively the individual now links himself with and secures the use of this continually increasing and continually more systematic and accessible super-memory. . . . (p. 1472). What is happening is a process of "mental personal expansion to which the only visible limit is our planet and the entire human species" (p. 1451).

This progressive, expansionary evolutionary process, Wells believed, has led variously to the development of new kinds of education, "the development of that conscious unification of the human species which is going on very rapidly," and the possibility of the ultimate suppression of war (p. 1471). In a passage describing the trajectory of the work's subject from cell to civilization, and emphasizing the strict scientific terms of the discussion, a case is made for the emergence of a new form of social organization which could only be constituted on the basis of the as-yet-unnamed World Brain.

> In this work we have traced the long process of synthesis from the single cell to the multicellular organism and from the coelenterate to the coelomate. We have seen the interdependence of individuals in space increase with the development of colonial and gregarious forms, and of individuals in time with the growing care and intimacy of parent for young. The higher forms of interdependence have evolved great extensions of mental correlation. We have shown how human social economy is based almost entirely upon the mental modifications of the individual and how little it owes to instinct. This mental modification is steadily in the direction of subordination of egotism and the suppression of extremes of uncorrelated individual activity. An inflation of the personal has gone on, so that the individual had become tribal, patriotic, loyal, or devotee. *Homo Sapiens* accommodates this persona, by which he conducts his individual life, to wider and wider conceptions (p. 1472).

[8] It is interesting in this context to note that in 1925, discussing the nature of the "microphotic book," Goldschmidt and Otlet in Belgium had already developed a similar idea for microphotographic libraries and a *Microphotic Encyclopaedia* (Goldschmidt and Otlet, 1925).

[9] I refer for convenience to Wells as the author of this work. He must certainly have been the major author for the parts that I discuss. It is very much his "voice" that one hears in these pages. He describes himself as "the senior member of the firm" who was responsible for "the initiation and organization of the whole scheme," noting that his contribution was "mainly literary and editorial" (Wells, Huxley, & Wells, 1931, p. 3).

Wells spoke of the gradual appearance "in the species Homo Sapiens" of "synthetic super-minds. . .into which individual consciousnesses tend to merge themselves." These super-individual organizations, are cultures, churches, communities, states, classes, and creeds and they represent "accumulations of mentality." Wells suggested that current trends seem to suggest that these are "coalescing." They seem to be heading towards "an ultimate unification into a collective human organism, whose knowledge and memory will be all science and all history, which will synthesize the pervading will to live and reproduce into a collective purpose of continuation and growth" (p. 1473).

Ultimately, we must see that Wells's understanding of man and society is grounded in biology and evolution, in the nearness of the ape and nature of learning in dogs. In *The Science of Life.* he gave much space to Pavlov's work with dogs and Koehler's with chimpanzees and apes. He examined and dismissed the then powerfully influential psychological theories of the behaviorist, J.B. Watson, as too limited to explain the functioning of the human brain. He did acknowledge, though, that "Watson and his school have made a real contribution to psychology in showing how plastic the mind of a child is, and what a huge part conditioning plays in building up much human behavior that looks at first glance simple, characteristic, and instinctive" (pp. 1222–1223). It is clear that Wells was much influenced by a kind of biological determinism implicit in this kind of theorizing and he discussed the research supporting it at some length.

The Outlook for Homo Sapiens, contains an account of learning in animals, especially dogs. Wells described how dogs can be socialized by the development of conditioned reflexes that ultimately lead to "the establishment of a taught secondary self in the cerebral cortex. None of these creatures are [*sic*] behaving in accordance with the primary tendencies they have inherited. They are behaving in accordance with an adaptive mental superstructure imposed upon their natural dispositions. It enables them to survive not simply as tolerated but as contributing individuals in a complex social organization which otherwise would have no alternative but their extermination" (Wells, 1942b, p. 24).

For Wells "the difference between adult human thought and the mental reactions of a dog or monkey, or a very young child, seems to be a difference not in kind but in complexity" (Wells, Huxley, & Wells, 1931, p. 1327). Wells would certainly accept that mankind was subject to a process of socialization not dissimilar to what he described as occurring in dog training. In the socializing process, an "adaptive mental superstructure" must be imposed on man's "natural dispositions." In this way a secondary self within society, "a world mind," might be formed within the cortex of a "world brain." With the evolution of a World Brain–World Mind, mankind will be able to adapt in the face of all of the evolutionary hazards with which the contemporary world confronts him, especially those threats that have been created as a result of inventions and discoveries that especially improve the efficiency of war and transportation.

Mankind, however, has teaching and learning advantages over dogs and the training to which they are subjected. While so much of human behavior, like that of animals, consists of conditioned reflexes and is socially determined, Wells believed that mankind's capacity to use speech and language to shape the conscious mind and in "excavating the unconscious mind" set him apart (Wells, Huxley, & Wells, 1931, Vol. 4, Ch. 7). As a result, for mankind "the taught stuff in the cerebellum becomes of overpoweringly greater importance than mere hard experience" (Wells, 1942b, p. 25). Mankind's ability to use language for the purposes of thought and in the processes of instruction allied to the extraordinary educability of the infant human, have brought him by a process of progressive natural development, Wells believed, to a stage in which a kind of global will and awareness are emerging. These in their turn offer a promise that man can eventually "control not only his destiny but that of all life on the planet" but for this to occur he must now act and take control.

Scientists will have a major role to play in this development. While recognizing that there may continue in the short term to be war and social dislocations, the authors of *The Science of Life* placed their faith in "the progressive development of the scientific mind" to direct the current "drift of constructive thought and power" (Wells, Huxley, & Wells, 1931, p. 1474). The direction of evolution, given a push by the scientist, is towards realizing an emergent phenomenon, "the Possibility of One Collective Human Mind and Will" (section heading, p. 1471).

The Outline of the Future

These ideas are taken up in Wells's *The Shape of Things to Come* (Wells, 1933). Though cast as a fiction, "the dream book of Dr. Philip Raven," this work may well be a version of that "Outline of the Future" about which Wells wrote enthusiastically to Doubleday. Announcing his idea for the new book, Wells said, "It won't be a 'fantastic' story; it will, if I don't fall down, be solidly real as well as wonderful" (Wells, 1932).

In effect, "The Outline of the Future" would complement the great trilogy, the "three correlated compilations," that Wells believed represented "together a complete system of ideas." First had come *The Outline of History* (1919, but with many editions subsequently). Then, first in parts and then as a four volume consolidation, came *The Science of Life,* 1929–1931. Finally, in 1931 came what he described as "the most difficult and original of all of these encyclopedic essays" (Wells 1942b, p. 56), *The Work, Wealth and Happiness of Mankind.* In order to make explicit the relationship between the three works, Wells proposed that subsequent editions of the last two should be subtitled respectively "Outline of Biological Science" and "Outline of Economic and Social Science" (Johnson, 1933; Wells, 1934, p. 616).[10]

[10] Wells had scrawled across the top of Johnson's letter, "This bloody fool has disregarded my explicit condition as to the second titles."

The importance of these works in Wells's thinking cannot be over estimated. The Open Conspiracy, he tells us "rests upon and arises out of a synthesis of historical, biological, and sociological realizations" (Wells, 1931b, p. 101), precisely what Wells had provided in the three synthetic treatises. In effect these works present what Wells described as "the threefold basis for a modern ideology, historical, biological and economic" (Wells, 1928, p. 104). Such an "ideology" provided a foundation on which the "Open Conspiracy" could proceed in its task of slowly, in a piecemeal way, bringing into being the World State on which, in Wells's view, mankind's future survival depended (Wells 1931b, p. 18).

An "Outline of the Future," such as is given in *The Shape of Things to Come*, extrapolates the trends of development in the earlier "scientific" syntheses. It gives Wells the opportunity to present both what he calls a "theory of world revolution" (Wells, 1933, p. 430) and his picture of the ideal World State that will emerge from this revolution. This in its turn is a reworking of his ideas about the New Republic first presented more than a generation before first in *Anticipations* (Wells, 1902) and *in extenso* in *A Modern Utopia* (Wells, 1905).

Wells observed that *The Shape of Things to Come* "is as deliberate and laborious a piece of work as anything I have ever done. . . . I think I have contrived to set out in it my matured theory of revolution and world government very plainly" (Wells 1934, p. 640). As an "Outline of the Future" it is a story of evolutionary adaptation. The evolutionary developments discussed in *The Science of Life* are, Wells tells us, "only the opening sentences of the next chapter of human biology" (Wells, Huxley, & Wells, 1931, p. 1476). In *The Shape of Things* to come he described how, as one dips further into that chapter of human development, mankind is shown as progressively emerging from the "decadence," "the twilight of social order" of the mid-twentieth century into a far more exalted state in the years of the 21st century.

This culmination is a technocratic achievement. The adaptive steps conform to Wells's notions of an "Open Conspiracy," though they are not labeled as such in the work itself. They are initiated by groups of scientists and engineers who "invade" politics in a "movement that spreads from workshop to workshop and from laboratory to laboratory" (Wells, 1933, pp. 262–266)." These groups of people are guided by theories of group psychology, especially the theories of "social nucleation" of a Wellsian avatar Gustave de Windt (p. 250). De Windt, we are told, is "not so much a creator as a summarize, a concentrator, a lens that gathers to a burning focus the accumulating mental illumination of his day" (p. 260)—like Wells himself. The successful application of de Windt's theories brings about "an epoch in biological history" (p. 425). This is a world renaissance and the emergence of the World State that Wells believed had become necessary if "the species was not to collapse, degenerate and perish by the wayside" (p. 254).

History is presented as a "readjustment of the individual to the racial life" (Wells, 1933, p. 427.) This readjustment involves a commitment to eugenics, very much in the air at this time. While Wells does not adopt Nazi-like ideas of racial purity, he clearly supports the notion that the application of eugenic principles can help achieve racial strength and adaptability. He recommends, for example, "the painless destruction of monsters and the more dreadful and pitiful sorts of defective. . .and also the sterilization of various types that would otherwise have transmitted tendencies that were plainly undesirable" (p. 394).

This is a recurrent and important issue for Wells. Almost thirty years before *The Shape of Things to Come* appeared, he stated the problem and the resolution he proposes for it even more graphically in *A Modern Utopia* (Wells, 1905). The problem is how society is to deal with the evolutionary implications of its "invalids, its idiots and madmen, its drunkards and men of vicious mind, its cruel and furtive souls, its stupid people, too stupid to be of use to the community, its lumpish, unteachable, and unimaginative people?" The answer comes without hesitation, "these people will have to be in the descendant phase, the species must be engage in eliminating them; there is no escape from that, and conversely, the people of exceptional quality must be ascendant. The better sort of people, so far as they can be distinguished, must have the fullest freedom of public service, the fullest opportunity of parentage" (Wells, 1905, p. 36). The State would provide support for "the mildly incompetent, the spiritless and dull, the poorer sort who are ill. . . ," though in return for support they must undertake to remain childless (Wells, 1905, p. 141).

Of course, in a society that he claims would have a "government as merciful and deliberate as it is powerful and decisive," there will be no need to execute criminals. There may even be no goals. Quietly, with "the strength that begets mercy," the state will remove those who are not acceptable to it to remote islands—a special island for the drunkards, for example, another for "cheats." In an extraordinarily anachronistic proposal, Wells harked back to the model of the British system of convict transportation of the late eighteenth century. This system is to be used not only to deal with the criminal strictly defined but those who have socially undesirable characteristics that might affect the genetic stock and the evolutionary process. That he should single out apparently so casually the dull, the unimaginative, the stupid, the furtive and so on for extermination or isolation is simply staggering to a late twentieth century sensibility. Who is to make these determinations and against what criteria? How is one to define precisely the "poorer sort" and the "better sort"? Might there not be among the "unteachable" those who resolutely refuse to accept Wells's (the orthodox, the State's) view of things? In order to avoid the possibility of children being produced by these literal outcasts, Wells suggested that "it may even be necessary to make these island prisons a system of monasteries and nunneries" (Wells, 1905, p. 144).

In *The Shape of Things to Come* he portrayed the adaptive processes at work in human society as overcoming "the

inherent distaste in the individual for subordination and self-sacrifice." By means of a "steady obliteration of primary motives" (Wells, 1933, p. 422) the necessary "sublimation of individuality" (p. 427) may be achieved. To ensure the success of the new social order that is beginning to appear in the 21st century "man's life and interests have been socialized against his natural disposition." This is described as a subversive individualism. In the future Wells's believed that "the obscurer processes of selection" will be "accelerated and directed by eugenic effort" and man will eventually become a new species (p. 426).

Taking up the ideas of language set out in *The Science of Life*, Wells suggests in *The Shape of Things to Come* that the developmental processes which he sees beginning to transform mankind will have an important linguistic dimension. English will first be reduced and purified to a form of C.K. Ogden's *Basic English* which was enjoying enormous popularity at the time Wells was writing. This linguistic activity would be monitored and developed by a Language Bureau. The Language Bureau in its turn would draw on the "science of significs" proposed by Ogden and I.A. Richards in their *Meaning of Meaning* of 1923. As a result of these attentions, Wells suggests, English will gradually become more lucid, more comprehensive and more able to function effectively as a "truly universal language." Improvements in language will contribute to the evolutionary process by allowing man's brain to become "far more neatly packed and better arranged, cleaner and better lubricated" than in the past (Wells, 1933, p. 418). This will involve a kind of physical rewiring of the brain. "The rearrangement of the association systems of the human brain which is now in progress brings with it—long before we begin to dream of eugenic developments— the prospect of at present inconceivable extensions of human capacity" (p. 419).

The ideal society into which we are being propelled by the forces of evolution, given a helping hand by modern Science and Technology, will culminate in a central intellectual organism, a World Brain. At the same time, these developments will be paralleled by "an immense increase in the amount, the quality, and the accessibility of knowledge." He suggests that "the continual advance in productive efficiency [will liberate] fresh multitudes of workers for its services" and will encourage the rapid growth of the World Brain. Wells sets up in Barcelona the headquarters of the Fundamental Knowledge System that he sees his new society requiring, but notes that it will have special stations everywhere as well as regional bureaux (Wells, 1933, p. 130).

> As the individual brain quickens and becomes more skillful, there also appears a collective Brain, the Encyclopaedia, the Fundamental Knowledge System which accumulates, sorts, keeps in order and renders available everything that is known. The Encyclopaedia Organization, which centers on Barcelona, with its seventeen million active workers, is the Memory of Mankind. Its tentacles spread out in one direction to millions of investigators, checkers and correspondents, and in the other to keep the education a process in living touch with mental advance (Wells, 1933, pp. 419–420).

Ideology, Politics, and the World Encyclopaedia

For Wells the World Brain had an essential ideological and political function. It would "bring all of the scattered and ineffective mental wealth of our world into something like common understanding, and into effective reaction upon our vulgar everyday political, social and economic life" (Wells, 1938, p. 17). Wells speaks of the World Encyclopaedia as providing a "directive synthesis" (Wells, 1934, p. 794). It will "reach down to direct the ideological side of human education. . ." (p. 795). He sees the new organization spreading "like a nervous network, a system of mental control about the globe, knitting all of the intellectual workers of the world through a common interest and common medium of expression into a more and more conscious cooperating unity and a growing sense of their own dignity, informing without pressure or propaganda, directing without tyranny" (Wells, 1938, p. 33). It is, he said, the only "possible method I can imagine of bringing the universities and research institutions of the world into effective cooperation and creating an intellectual authority sufficient to control and direct our collective life" (p. 68).

He sees the new central encyclopedic organization "informing, suggesting, directing unifying" reaching into "every corner of the world" (p. 71). It would "hold men's minds together in something like a common interpretation of reality" (p. 35). It foreshadowed "a real intellectual unification of our race" (p. 86–87). It would be a world organ whose function would be to "pull the mind of the world together." (p. 85). Wells observed that "a common ideology based on this Permanent World encyclopaedia is a possible means, to some it seems the only means, of dissolving human conflict into unity" (p. 62). He suggested with apparent approval that it would "*compel* men to come to terms with one another" (Wells's emphasis, p. 23).

It is clear that for Wells one of the attractions of the new World Encyclopaedia organization, the World Brain, is that it will allow us to wind up and replace outmoded institutions as the new World State is established. A new form of direction and control of human affairs will emerge that will rescue us from the dangers into which we are drifting. Wells foresees no real obstacles developing to what he calls "the production of such a ruling World Brain."

> In a universal organization and clarification of knowledge and ideas, in a closer synthesis of university and educational activities, in the evocation, that is, of what I have here called a World Brain, operating by an enhanced educational system through the whole body of mankind, a World Brain which will replace our multitude of uncoordinated ganglia, our powerless miscellany of universities, research institutions, literatures with a purpose, national education systems and the like; in that and in that alone, it is maintained, is there any clear hope of a really Competent Receiver for world affairs, any hope of an adequate directive control of

> the present destructive drift of world affairs (Wells, 1938, p. xvi).

The most common meaning of Receiver, apart from that related to stolen goods, is an official appointed to help wind up the affairs of a company going into liquidation. The Competent Receiver is an important aspect for Wells of the Open Conspiracy—a sort of Oliver Cromwell on a white charger purging the state of reactionary elements inimical to the emerging world polity. Beatrice Webb sums up something of the effect these ideas were having at about this time on one thoughtful observer and long-time acquaintance. In her diary for March 31, 1939, she records that she had lunched with Wells. "He was obsessed with his own vague vision of a world order, with his search for a 'competent receiver' of the power to organize mankind. The mass electorate and its representatives were totally unfit for the job. But he utterly failed to make me understand what kind of social institution he had in mind" (Webb, 1985, pp. 431).

A source for understanding what Wells may have had in mind is his early book, *A Modern Utopia* (Wells, 1905). In this work he presents, from a modern point of view, a frequently horrifying vision of what for him is the great new World State in the making. The new World State, he suggests, will take its origin in a society in which, because of the development of science and technology, man is finally "emancipated" from physical labor" (Wells 1905, p. 98). "The whole trend of a scientific mechanical civilization is continually to replace labor by machinery and to increase it in its effectiveness by organization. . ." (p. 152). The result is to change the nature of life's "incentives" and to make it "less panic-stricken and violent and base" (p. 155). But this kind of emancipation from "toil" raises the problem of finding an appropriate disposition of the working class now dispossessed of its traditional employments. This is one of Wells's persistent themes (Wells, 1902).

In *A Modern Utopia* (Wells, 1905), Wells suggests that the government of the new utopia will be a new kind of governing class, to whom he gave the name, "the Samurai." Wells acknowledged his debt to Plato's Republic and to the Japanese tradition of "bushido" in formulating his ideas about the Samurai. The responsibility for ruling the world will lie in their hands. They will be the administrators and politicians and only they will be allowed to vote (Wells, 1905, p. 310). Wells describes in considerable detail their roles and responsibilities.

In *The Shape of Things to Come* some thirty years later Wells portrays the government of his new and ideal state as unashamedly absolutist and totalitarian.

> the landowner of the earth. . .it will maintain order, maintain roads, maintain a cheap efficient administration of justice, maintain cheap and rapid locomotion and be the common carrier of the planet, convey and distribute labor, control, let or administer all natural productions, pay for and secure healthy births and vigorous new generation, maintain the public health, coin money and sustain standards of measurement, subsidize research, and reward such commercially unprofitable undertakings as benefit the community as a whole, subsidize, when needful chairs of criticism ad publication, and collect and distribute information (Wells, 1933, pp. 89–90).

For purposes of government and, if necessary, preventative disposition, the populace in Well's extraordinary Utopia, is to be divided into four categories: The poietic, the kinetic, the dull and the base. This division allows Wells to "vest all of the executive and administrative work in the kinetic class. While the poietic class may have role in suggestion, criticism and legislation, the kinetic class are responsible for controlling the base and giving the dull "an incentive to kinetic effort" (Wells, 1933, p. 562). Presumably the kinetic class is a later version of Wells's new order of Samurai first described in *A Modern Utopia.* Although he does not use this name in *The Shape of Things to Come,* it is clear that, almost thirty years after first describing how the order of Samurai would be constituted, the qualifications needed for admission to its non-hereditary ranks, the work it would perform, the strict and ascetic mental and social disciplines which would sustain it, for Wells it retained a central importance in his system of thought. In his *Experiment in Autobiography,* he observes, "A Samurai order educated in such an ideology as I have since tried to shape out, is inevitable if the modern world-state is to be fully realized" (Wells, 1934, p. 563).

Beatrice Webb has a rather dismissive comment on the Samurai, too. She met Wells and his son at tea with George Bernard Shaw, in 1932, at the height of the Great Depression. An ardent admirer of the communist system of the Soviet Union, she reported disapprovingly that Wells had denigrated Russian communism. "He is still infatuated," she observed, "with the conception of a conspiracy of international Samurai capitalists to rule the world of the common men and he is prepared to sit down right away and draft the requisite decrees which will bring back prosperity" (Webb, 1985, p. 285).

What of the machinery of government? In *A Modern Utopia,* written long before Wells began to think in terms of a World Brain, he suggested that the administration of the World State would require a kind of Registrar General's Department in which would be maintained a giant world index, what today would be called a database. The major function of this index would be to ensure that every person in the world can be "promptly and certainly recognized." It would provide a record of all of the movements of the populace. In it would be entered "various material facts, such as marriage, parentage, criminal convictions and the like." The newborn would be recorded and the dead removed. "Each human being would be given a distinct formula, a number or a 'scientific name,' under which he or she could be docketed." The main index would be supplemented by "a system of other indices with cross references to the main one, arranged under names, under professional qualification, under diseases, crime and the like." (Wells, 1905, pp. 162–164).

This is Wells's vision of the collection and centralization of information for control of the world state, a Big Brother organization imagined fifty years before Orwell's chilling vision captured the popular imagination.

> These index cards might conceivable be transparent and so contrived to give a photographic copy promptly whenever it was needed, and they could have an attachment into which would slip a ticket bearing the name of the locality in which the individual was last reported. A little army of attendants would be at work on this index day and night. From the sub-station constantly engaged in checking back thumb-marks and numbers, an incessant stream of information would come, of births, of deaths, of arrival at inns, of applications to post offices for letters, of tickets taken for long journeys, of criminal convictions, marriages, applications of public doles and the like. A filter of offices would sort the stream, and all day and all night for ever a swarm of clerks would go to and fro correcting the central register, and photographing copies of its entries for transmission to the subordinate local stations, in response to their inquiries. So the inventory of the State would watch every man and the wide world would write its history as the fabric of destiny flowed on (Wells, 1905, pp. 164–165).

Clearly the Index Organization of *A Modern Utopia* must underpin the administrative and political decisions of the Samurai. It would provide them not only with the means to exercise control over the movement and behavior of the population of the new world state but also with the information needed to govern this new state wisely and well. In 1905, Wells suggested that "Bacon's visionary House of Solomon" would at last be realized in the new utopia with "reports of scientific experiments, as full, as prompt as telegraphic reports of cricket" flashing from it about the world. (Wells, 1905, p. 60). But when he hints at the need for a World Brain it is entirely in the potentially repressive context of total social surveillance.

> I have compared the indexing of humanity we have come upon to an eye, an eye so sensitive and alert that two strangers cannot appear anywhere upon the planet without discovery. Now an eye does not see without a brain, an eye does not turn round and look without a will or purpose (Wells, 1905, p. 172).

The World Brain organization described in *The Shape of Things to Come* of 1933, the headquarters for which is located in Barcelona, contains echoes of the index organization described in *A Modern Utopia* of 1905. One imagines that the vast centralized database of *A Modern Utopia* that is needed for the surveillance and disposition of the population would necessarily be part of the new and improved "knowledge apparatus" Wells was latter to describe as a World Brain or World Encyclopaedia organization.

The Nature and Unity of Knowledge

The recurrent notion of "directiveness" is ominous in Well's discussions of the fundamental purpose of the encyclopedic organization—though central to any notion of brain function, the "ruling World Brain" mentioned above (Wells 1938, p. xvi). Wells emphasis on direction and control highlights how far he has traveled from the philosophical underpinnings of the *Encyclopédie* of Diderot. This he claimed was one of the sources of his inspiration, especially in its attempt to create a new ideology on which a new kind of society might rest (Wells, 1931a, pp. 842–843). "I am," he wrote to Doubleday, "a Utopian liberal socialist, with a scientific training. I consider myself in the line of succession of Diderot" (Wells, 1998). But he was more. He clearly saw himself as a member of a newly emergent technocratic elite in whom "Science" had vested access to the simplification and absoluteness of Truth amidst all the clamor, strife, ambiguity and confusion of the modern age.

In 1931 he made a broadcast on "What I would do with the world." The premise of the talk was that he was to be made the dictator of the world—an intriguing fiction for one so concerned with ideas of social reformation. As World Dictator, he tells us, he would at once create the World State. It would need to have governing boards for economic affairs and police. "There would also need to be a great world organization sustaining education, scientific research, and the perpetual revision of ideas." These organizations would represent the end point of a process of administrative and political simplification because they would concentrate and harness the scientific knowledge of experts. It would be they who would carry on the essential business of the planet. "But it may well be asked, Who will make the ultimate decision?" Certainly not a world government, in Wells's view, because none would be necessary: The management of world affairs had been placed in the hands of experts. "Suppose your intellectual organization, your body of thought, your scientific men, say and prove this, that or the other course is the *right* one [Wells's emphasis]. Suppose they have the common-sense of an alert and educated community to sustain them. Why should not a dictatorship—not of this or that man, nor of the proletariat, but of informed and educated common-sense—some day rule the earth?" (Wells, 1932b, pp. 202–203).

Wells seems here to be once again describing his order of Samurai. He seems committed to the idea that political and social decisions are reducible to questions of scientific—and economic—fact. As he envisages the new society that will take shape in the future, the narrator of *The Shape of Things to Come* puts in the mouth of the social scientist de Windt what must be interpreted as Wells's own view. De Windt opposes the parliamentary system of government with its professional Opposition. "Criticize," he wrote, "yes, but don't obstruct." De Windt taught that "if a directive organization is fundamentally bad. . .break it and throw it away." What was intolerable was the "tangle of ideas" engendered by contemporary systems of government. De Windt—and Wells?—believed that, "about most affairs there can be no two respectable and antagonistic opinions. . .there is one sole right way and endless wrong ways of doing things" (Wells, 1933, p. 256).

Wells appealed, as he grew more urgent with disappointment at the lack of acceptance of his ideas and as the world seemed to draw ever close to the brink of disaster, to a new class, an intellectual elite, into which he defines himself. He refers to "we, I mean the sociologists, the human ecologists . . .the world intelligentsia and our sort of people generally" (Wells, 1942a, pp. 20–21). These are the Open Co-conspirators, perhaps conceivable as the forerunners of the Samurai with disciplined minds and steady opinions.

Wells believed that authors—in fact "the larger part of the world of literary artistry"—form a class that seems to resemble the poietic class of *A Modern Utopia*. He describes it as a class of the "more powerfully receptive types," such as George Bernard Shaw, an old friend though they had a long falling out, and other prominent writers of Wells's day most of whom he knew to a greater or lesser extent. It is clear that for him they could never be part of the administrative and governing elite he called the Samurai. Such "receptive types" were characterized by the "inner arbitrariness and unreality of the untrained common man." They were "impulsive, uncoordinated, willful." Wells believed that "their education has been lacking so that they lapse "into inconsistent and dramatized ways of thinking and living." This is unacceptable. It is a fate from which "a more expert and scientific educational process" might have saved them.

Ultimately the scientific and technocratic elite whose minds, like Wells's, are "systematically unified" and equipped "to get things ruthlessly mapped out and consistent" (Wells, 1934, p. 529) are the ones to "clean up the problem of methods and organization for the world-mind. . ." (Wells, 1942a, pp. 20–21). Observations such as these make it clear why Hollinger sees Wells as one of those who form a "peculiar tradition of modernism" which is defined by "its faith in science, its sense that what our civilization requires in order to be rescued from itself is more likely to come from communities of knowers than from a succession of artist-heroes" (Hollinger, 1991, p. 43).

The upshot of these views is that Wells seems to suggest that he has no time for dissenting opinions. He clearly devalues the contribution that a multiplicity of viewpoints can make to the discussion of issues and the formation of opinion. He seems to repudiate the inevitable and perhaps necessary ideological conflicts and disagreements that enrich many areas of intellectual and political life and from which new knowledge on the one hand and policy on the other emerges and are tested. It is as though he believed that something akin to doctrinal conformity had become necessary in the face of a world he saw as having become too chaotic and directionless to survive. In 1942 he observed, perhaps echoing the famous phrase in *The Outline of History* that human beings faced "a race between education and catastrophe," that "the trend of things is still I believe towards disaster and extinction." But even so, some "obstinate" part of him believed that opportunities remained for creating a "framework of a world order with a world-mind" (Wells, 1942a, p. 41). Such opportunities had to be seized by his sort of people, a new scientifically educated technocratic elite with orderly minds and the ability to ascertain in the midst of the hurly burly of modern life, the one "right" way of doing things.

Assessing Wells's World Brain

It is easy to read Wells's statements today as expressing an essentially negative vision rather than a positive one, as reflecting perhaps a last and, in the final analysis, desperate appeal by an old, passionate "utopian liberal socialist" for the kind of certainty of truth that characterized the nineteenth century positivist science of his youth. How he invoked the name and nature of science! Yet, while modern (and postmodern) scientific and social thought had not yet issued to the mode of knowing to which he appealed the extended challenges that are so much part of the intellectual milieu of the late twentieth century, what he called for was not in the nature of things available to him. He had passed beyond the realms of science, which had nurtured his world view and of whose virtues he was so famously an exponent, to a deep emotional commitment to a social ideology.

Over the decades Wells had lectured often on, and had written voluminously, obsessively about, the coming of a new world order. Described in detail in *The Shape of Things to Come*, it was to be a culmination of the evolutionary, psychological, educational and social processes set forth in *The Outline of History*, *The World Wealth and Happiness of Mankind* and *The Science of Life*. In the last and longest chapter of his *Experiment in Autobiography*, "The Idea of a Planned World," he discusses the genesis and development of these ideas (Wells 1934, pp. 549ff). They represent his response to both the geo-political conditions and the science of his times. Especially important was his conviction that the processes of human evolution were being accelerated by the work of modern science. New and valuable forms of social organization were emerging which continued to be threatened by nationalism, religion, narrow-mindedness, individualism, intolerance, weapons technology, and the deepening threat of a new war. How to resist these disruptive forces, while the new kinds of socially desirable developments were urgently and actively delivered into being, was the fundamental problem that society had to grapple with. For Wells, mankind was now, it seemed, at a stage of development where it was possible to take control and direct the processes of evolution, but the balance between extinction and survival was delicate and in 1945, old and ill, Wells finally lost hope (Wells, 1945).

He had put his faith in the reform of education and the creation of a World Brain, a "new encyclopedism." His *Science and the World Mind* (Wells, 1942a) is a cry for it. But despite the burden of hope with which Wells invested the idea of a World brain, it can be argued that it was for him conceptually no more than an extension of the formidable encyclopedic overviews of knowledge that he had compiled after the First World War and which I have discussed above.

Wells tells us that, as he began to make progress on the first of these works, *The Outline of History*, he "saw more

and more plainly that this was the form, the only right form, in which history should be presented to the ordinary citizen. . .I realized too that even my arrangement of notes, if it was properly 'vetted' by one or two specialized and authoritative helpers, might be made to serve, provisionally at least, for just that general review of reality of which we stood in such manifest need if any permanent political unity were to be sustained in the world" (Wells 1934, p. 614). He believed that together his three large syntheses of the knowledge of the day ". . . give a clearer, fuller and compacter summary of what the normal citizen of the modern state should know, than any other group of books in existence. They shape out something that presently will be better done" (p. 618). He does admit that they are "exploratory experiments" but he believes that they will help educate people to become "world citizens," and will help to provide a "foundation" for that "common understanding" that is necessary to hold a "world community" together (p. 619), one of the fundamental purposes of his World Brain.

Curiously Wells is describing what might be interpreted as a revival of medieval and renaissance commonplace books which served as the basis for some of the first modern encyclopedic compilations of knowledge (Moss, 1996). For a seminal author of science fiction whose plots, images, and prescient inventions are as potent today as they ever were, this is surely anticlimactic. Technologically, Wells's "World Brain" is remarkably under-imagined and has none of the flashes of imaginative genius that have given such life and power to his books of acknowledged science fiction.[11]

In the final analysis, then, it is possible to describe Wells's the World Brain in this way. It is the latest and greatest expression of socio-biological evolution. It is to be the organ that will be at once shaped by, and responsible for, the ultimate success of that "open conspiracy" by means of which scientists and others will create a new world order. As a fundamental aspect of this new world order, it will provide the information necessary for the suppression of dissent and diversity. It will be under the control of an antiindividualist, antidemocratic administrative and scholarly elite, the Competent Receiver and the grandiosely named order of Samurai. These "officials" will carry out their duties and sustain their repressive regimes administratively on the basis of knowledge derived from a huge database in which is integrated information about all aspects of the lives of the citizens under their care. They are to manage broader sociobiological matters relating to the immediate welfare and evolutionary development of the human race, including weeding out the unfit for detention or destruction.

The information they need to discharge these responsibilities will be derived from what is no more than a "properly vetted arrangement of notes." These notes are to be provided by the personnel constituting the World Brain organization. These are the "carefully assembled sequence" of "selections, extracts, and quotations" that Wells identifies as grist for the World Brain's cognitive mill (Wells, 1938a, pp. 14–15). They are, conceptually no more than an extension of his own notebooks. For Wells, the World Brain is simply his own brain writ large.

Conclusion

Wells's vision of a World brain is troubling in and of itself. But it also raises issues of a broader kind that pose a challenge to contemporary accounts of an emerging Word or Global Brain, whether they echo Wells or not. All of these accounts embrace a kind of evolutionary determinism which suggests that a new kind of sentient super-organism is emerging from the complex social arrangements by which we live our lives. What is being referred to is not simply the modification of existing or even the development of new social and personal arrangements to accommodate new political realities (the new Europe for example) or technological innovation (such as the motor car, the telephone or the television). Something far beyond the ken of ordinary people and "alive" is envisaged. It is alive also in a way that requires the subordination of the will, intelligence and interests of ordinary people. As individuals are subsumed by or absorbed into it, their independence and instrumentality in their own lives are inevitably curtailed in the expectation of general social betterment rather than an enhancement of individual potential. It is neither tool nor prosthesis but may be interpreted as an expression of totalitarian values and authoritarian control.

World Brain or Global Brain proponents tend to extrapolate quite extravagantly the capabilities and implications of emerging technology. For Wells it was microfilm. Today it is the infinitely more sophisticated Internet and World Wide Web which have enmeshed our globe in a fantastically intricate and diffused communications infrastructure. By means of this technology as World or Global Brain proponents imagine it taking shape, the effective deployment of the entire universe of knowledge will become possible.

But this begs unresolved questions about the relative value of the individual and the state, about the nature of individual and social benefits and how they are best to be allocated, about what constitutes freedom and how it might be appropriately constrained. It flies in the face of the intransigent reality that what constitutes the ever-expanding

[11] It is interesting to compare Wells with Paul Otlet in this context. Otlet believed that Radio, x-rays, cinema and microscopic photography would all eventually be brought together in such a way to form "a mechanical, collective brain" (Otlet, 1935, pp. 390–391), a kind of "exodermic appendage to the brain," "a substratum of memory," "an external mechanism and instrument of the mind" (Otlet 1934, p. 428; also Rayward, 1975, 1994, 1997). I have not found evidence that Wells knew directly of Otlet's work though Otlet had begun publishing about what he was to call documentation as early as 1893. Wells's contacts with the European documentation movement that originated with Otlet seems to have been only through the British documentalists, Pollard and Bradford. Otlet over the years had developed his own ideas about a new form of encyclopaedia both as an "Office of Documentation" and as an ever-expansible "Book" drawing on a technology of cards and cabinets and later microfilm (Rayward, 1994, 1997). Nevertheless in his remarks at the 1937 documentation congress in Paris, at which both he and Wells spoke, Otlet observed, I assume referring to Wells's talk at the congress, that the ultimate aim of documentation "is to realize the World Encyclopaedia according to the needs of the twentieth century" (Rayward, 1975, p. 358).

store of human knowledge is almost incalculably massive in scale, is largely viewpoint dependent, is fragmented, complex, ceaselessly in dispute and always under revision.

Finally, one might ask what happens to individuals and to society when the World or Global Brain malfunctions, whether within the limits of normality or pathologically? What do the limitations and failures that characterize the human brain and with which we are all too familiar, mean for the World or Global Brain? At the level of the *psychopathology of everyday life,* through slips of the tongue, misunderstandings, preconceptions, failures of recall, inability to assimilate new ideas, lapses of attention, forgetting, dreams and daydreams, the mind and so the brain is forever tripping us up, letting us down, tricking us, unexpectedly revealing clues to subterranean depths. The human brain is the site of what is irrational as well as what is rational—and presumably this has implications for the World Brain. Moreover, if we go from the normal to the pathological, how do we deal with the notion of a World Brain that is schizophrenic, demented, subject to cerebral hemorrhage or massive stroke.

Issues such as these are provoked by Wells's account of the World Brain and are implicit in any modern discussion of the idea, whether at the level of metaphor or of a kind of emergent cyborg reality. If the idea is to be useful and its practical realization convincingly argued, issues such as these must be satisfactorily resolved.

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